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CERTIFICATION TEST REPORT

Manufacturer: **Magnum Energy Solutions**
43 Village Way
Hudson, Ohio 44236 USA

Applicant: Same as Above

Product Name(s): **Transceiver Module (LTCM300U, LTCM310U);**
Scavenger Transceiver Module (LSTM300U)

Product Description: 902.875 MHz Transmitter Module

Operating
Voltage/Frequency: 120V/60 Hz

Model(s): **LTCM300U***

**Denotes actual model tested of product family that includes the following: LSTM300U is same module, but application is in sensor. LTCM310U is same module, but not programmable.*

FCC ID: **2ANUH-LSTM300U**

Testing Commenced: Oct. 12, 2017

Testing Ended: Feb. 1, 2018

Summary of Test Results: **In Compliance**

The EUT complies with the EMC requirements when manufactured identically as the unit tested in this report, including any required modifications and/or manufacturer's statement. Any changes to the design or build of this unit subsequent to this testing may deem it non-compliant.

Standards:

- ❖ **FCC Part 15 Subpart C, Section 15.247**
- ❖ **FCC Part 15.31(e)**
- ❖ **ANSI C63.10:2013**



Order Number: F2LQ10353

Client: Magnum Energy Solutions

Model: LTCM300U

Evaluation Conducted by:

Joe Knepper, EMC Proj. Eng.

Report Reviewed by:

Ken Littell, Director of EMC & Wireless Operations

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1 ADMINISTRATIVE INFORMATION

1.1 Measurement Location:

F2 Labs in Middlefield, Ohio. Site description and attenuation data are on file with the FCC's Sampling and Measurement Branch at the FCC Laboratory in Columbia, MD.

1.2 Measurement Procedure:

All measurements were performed according to the 2013 version of ANSI C63.10 and recommended FCC procedure of measurement of DTS operating under Section 15.247 and in KDB558074. A list of the measurement equipment can be found in Section 6.

1.3 Uncertainty Budget:

The uncertainty in EMC measurements arises from several factors which affect the results, some associated with environmental conditions in the measurement room, the test equipment being used and the measurement techniques adopted.

The measurement uncertainty budgets detailed below are calculated from the test and calibration data, and are expressed with a 95% confidence factor using a coverage factor of $k=2$. The Uncertainty for a laboratory are referred to as U_{lab} . For Radiated and Conducted Emissions, the Expanded Uncertainty is compared to the U_{cispr} values to determine if a specific margin is required to deem compliance.

U_{lab}

Measurement Range	Combined Uncertainty	Expanded Uncertainty
Radiated Emissions <1 GHz @ 3m	2.54	5.07dB
Radiated Emissions <1 GHz @ 10m	2.55	5.09dB
Radiated Emissions 1 GHz to 2.7 GHz	1.81	3.62dB
Radiated Emissions 2.7 GHz to 18 GHz	1.55	3.10dB
AC Power Line Conducted Emissions, 150kHz to 30 MHz	1.38	2.76dB
AC Power Line Conducted Emissions, 9kHz to 150kHz	1.66	3.32dB

U_{cispr}

Measurement Range	Expanded Uncertainty
Radiated Emissions <1 GHz @ 3m	5.2dB
Radiated Emissions <1 GHz @ 10m	5.2dB
Radiated Emissions 1 GHz to 2.7 GHz	Under Consideration
Radiated Emissions 2.7 GHz to 18 GHz	Under Consideration
AC Power Line Conducted Emissions, 150kHz to 30 MHz	3.6dB
AC Power Line Conducted Emissions, 9kHz to 150kHz	4.0dB

If U_{lab} is less than or equal to U_{cispr} , then:

- compliance is deemed to occur if no measured disturbance exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance exceeds the disturbance limit.

If U_{lab} is greater than U_{cispr} in table 1, then:

- compliance is deemed to occur if no measured disturbance, increased by $(U_{lab} - U_{cispr})$, exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance, increased by $(U_{lab} - U_{cispr})$, exceeds the disturbance limit.

Note: Only measurements listed in the tables above that relate to tests included in this Test Report are applicable.



Order Number: F2LQ10353

Client: Magnum Energy Solutions

Model: LTCM300U

1.4 Document History

Document Number	Description	Issue Date	Approved By
F2LQ10353-01E	First Issue	Feb. 6, 2018	K. Littell

**2 SUMMARY OF TEST RESULTS**

Test Name	Standard(s)	Results
-6dB Occupied Bandwidth	CFR 47 Part 15.247(a)(2) / KDB558074	Complies
Conducted Output Power	CFR 47 Part 15.247(b)(3) / KDB558074	Complies
Voltage Variations	CFR 47 Part 15.31(e)	Complies
Conducted Spurious Emissions	CFR 47 Part 15.247(d) / Part 15.207 / KDB558074	Complies
Radiated Spurious Emission with 3.3dBi Integral Antenna	CFR 47 Part 15.247(d) / Part 15.209 / KDB558074	Complies
Peak Power Spectral Density	CFR 47 Part 15.247(e) / KDB558074	Complies
Frequency Separation	ANSI 63.10 2013 (7.8.2)	N/A
Number of Hopping Frequencies	ANSI 63.10 2013 (7.8.3)	N/A
Dwell Time	ANSI 63.10 2013 (7.8.4)	N/A
Conducted Emissions	CFR 47 Part 15.207(a)	Complies

Modifications Made to the Equipment
None



3 TABLE OF MEASURED RESULTS

Test		Low Channel 902.8 MHz
Conducted Output Power		8.20mW (9.14dBm)
Conducted Output Power Limit		1 Watt (30dBm)
E.I.R.P. with 3.3dBi Whip Antenna		17.5mW (12.43dBm)
E.I.R.P. Limit		4 Watts (36.02dBm)
Peak Power Spectral Density		7.92dBm
Peak Power Spectral Density Limit		8dBm
-6dB Occupied Bandwidth		0.5337 MHz
-6dB Occupied Bandwidth Limit		≥ 500kHz
Voltage Variations	100V(dBm)	9.13
	100V(mW)	8.20
	138V(dBm)	9.09
	138V(mW)	8.11



4 ENGINEERING STATEMENT

This report has been prepared on behalf of Magnum Energy Solutions to provide documentation for the testing described herein. This equipment has been tested and found to comply with Part 15.247 of the FCC Rules using ANSI C63.10:2013 and KDB558074 standards. The test results found in this test report relate only to the items tested.



5 EUT INFORMATION AND DATA

5.1 Equipment Under Test:

Product: Transceiver Module

Model: LTCM300U*

Serial No(s): 274703087664; 274703032880 (wire antenna tests only)

FCC ID: 2ANUH-LSTM300U

**Denotes actual model tested of product family that includes the following: LSTM300U is same module, but application is in sensor. LTCM310U is same module, but not programmable.*

5.2 Trade Name:

Magnum Energy Solutions

5.3 Power Supply:

Non-Rechargeable Batteries; PhiHong PSAA20R-033

5.4 Applicable Rules:

CFR 47, Part 15.247, subpart C

5.5 Equipment Category:

Radio Transmitter-DTS

5.6 Antenna:

3.3 dBi Whip Antenna

1.2 dBi Whip Antenna

5.7 Accessories:

N/A

5.8 Test Item Condition:

The equipment to be tested was received in good condition.

5.9 Testing Algorithm:

For RF antenna conducted tests, the EUT was equipped with an SMA connector for connection to the measuring equipment. For radiated emissions tests, in a semi-anechoic chamber the EUT was equipped with a wire antenna, a 1.2dBi whip antenna and a 3.3dBi gain whip antenna. The highest emissions were recorded in the data tables.

**6 LIST OF MEASUREMENT INSTRUMENTATION**

Equipment Type	Asset Number	Manufacturer	Model	Serial Number	Calibration Due Date
Shielded Chamber	CL166-E	AlbatrossProjects	B83117-DF435-T261	US140023	Nov, 14, 2017
Temp/Hum. Recorder	CL137	Extech	RH520	CH16992	June 21, 2018
Receiver	CL151	Rohde & Schwarz	ESU40	100319	Nov. 28, 2017
Antenna, Bilog	CL211	Sunol Sciences, Inc.	JB1	A021017	Mar. 2, 2018
Horn Antenna	CL098	Emco	3115	9809-5580	Dec. 28, 2018
Preamplifier	CL153	Keysight Tech.	83006A	MY39500791	June 20, 2018
Active, 18" Loop Antenna	CL163	A.H. Systems, Inc.	EHA-52B	100	May 2, 2018
Temp./Hum. Recorder	CL119	Extech	RH520	H005869	Dec. 28, 2018
Transient Limiter	0202	Hewlett Packard	11947A	3107A00729	June 27, 2018
Spectrum Analyzer	CL147	Agilent	E7402A	MY45101241	Nov. 16, 2018
LISN	CL181	Com-Power	LI125A	191226	June 24, 2018
LISN	CL182	Com-Power	LI-125A	191225	June 24, 2018
Software:	Tile Version 3.4.B.3		Software Verified: Oct. 12, 2017; Feb. 1, 2018		
Software:	EMC 32, Version 8.53.0		Software Verified: Oct. 12, 2017		



7 FCC PART 15.247(a)(2) – OCCUPIED BANDWIDTH

7.1 Requirements:

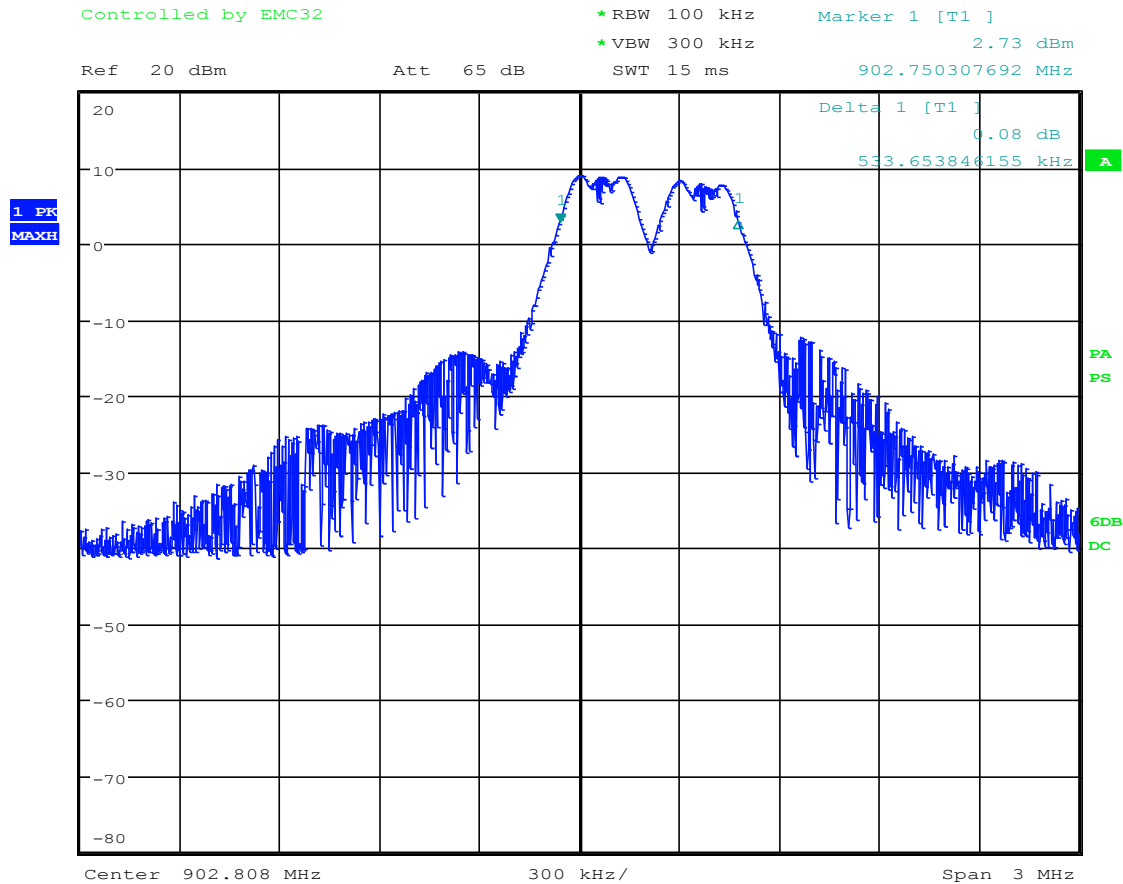
The 6dB bandwidth shall be greater than 500kHz.

Bandwidth measurements were made at 902.8 MHz. The bandwidth was measured using the analyzer's marker function.



7.2 Occupied Bandwidth Test Data

Test Date(s):	Oct. 12, 2017	Test Engineer(s):	J. Knepper
Standards:	CFR 47 Part 15.247(a)(2); KDB558074	Air Temperature:	20.2°C
		Relative Humidity:	45%



Date: 12.OCT.2017 11:06:18



8 FCC PART 15.247(b)(3) – CONDUCTED OUTPUT POWER

The EUT antenna port was fitted with an SMA connector and directly connected to the input of the receiver. The peak power output was measured.

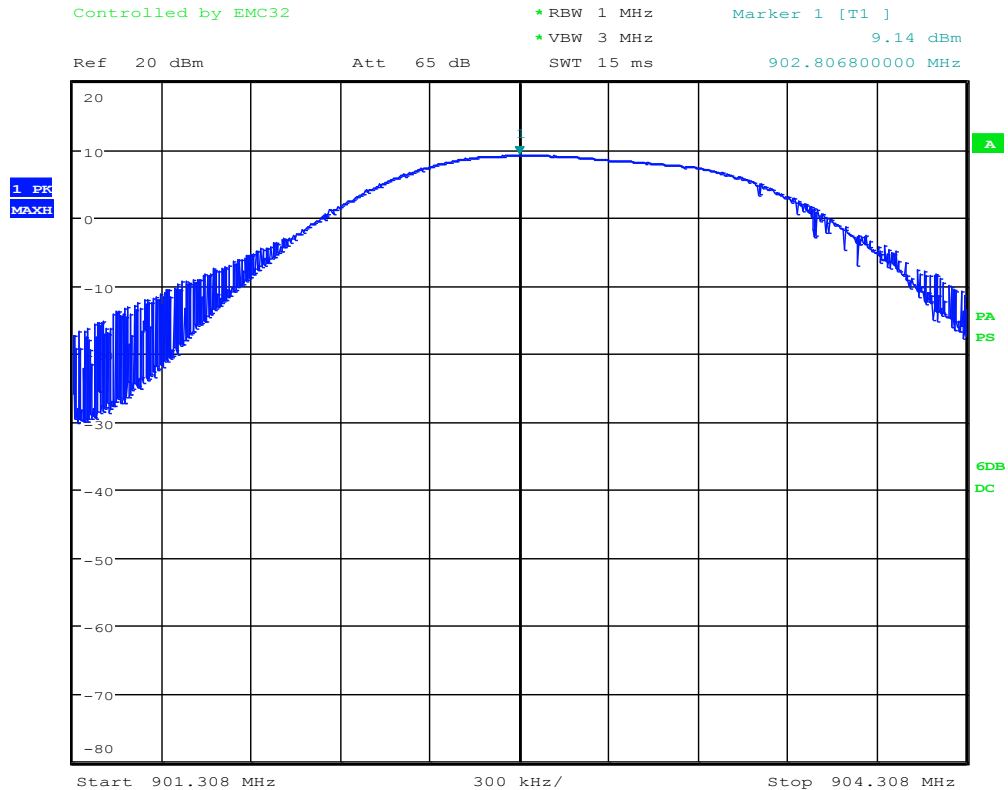
8.1 Requirements:

The peak power output shall be 1 watt (30 dBm) or less when using an antenna with a gain of less than 6dBi. For antennas having a gain of more than 6dBi, the limit is reduced by 1dB for every dB the antenna gain is over 6dBi.



8.2 Conducted Output Power Test Data

Test Date(s):	Oct. 12, 2017	Test Engineer(s):	J. Knepper
Standards:	CFR 47 Part 15.247(b)(3); KDB558074	Air Temperature:	20.2°C
		Relative Humidity:	45%



Date: 12.OCT.2017 11:10:07



9 FCC PART 15.31(e) – VOLTAGE VARIATIONS

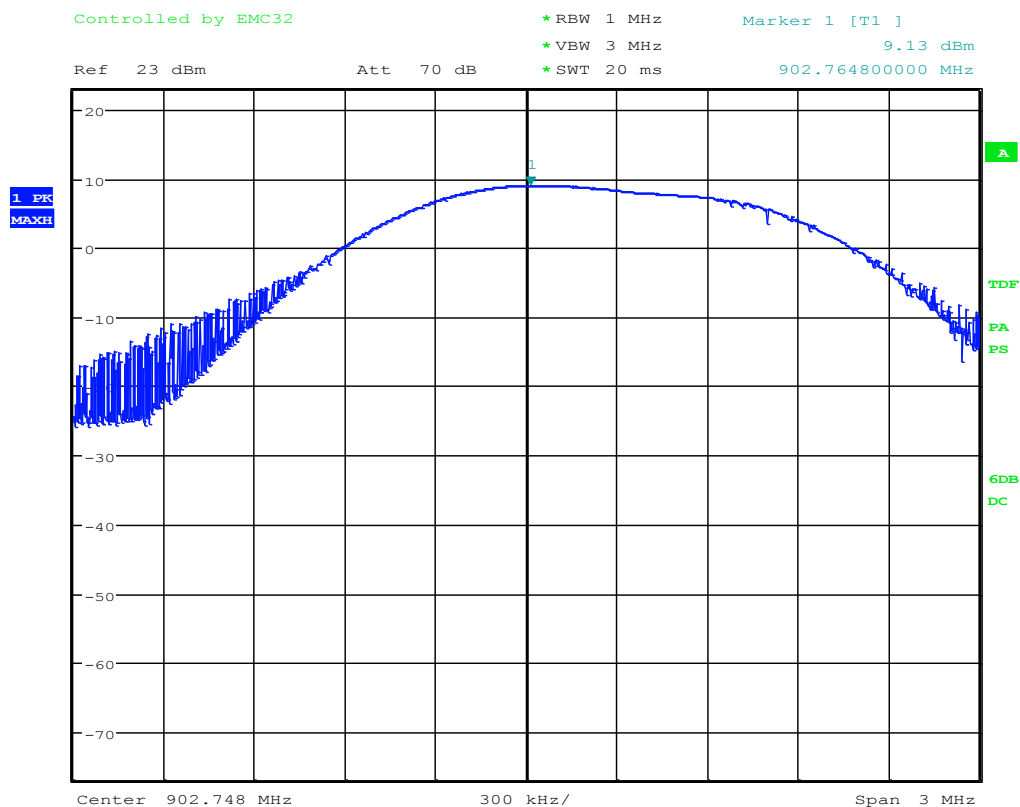
9.1 Requirements

For intentional radiators, measurements of the variation of the input power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage. For battery-operated equipment, the equipment tests shall be performed using a new battery.

9.2 Voltage Variations Test Data

Test Date(s):	Feb. 1, 2018	Test Engineer(s):	J. Knepper
Rule:	15.31(e)	Air Temperature:	18.9° C
Test Results:	Complies	Relative Humidity:	43%

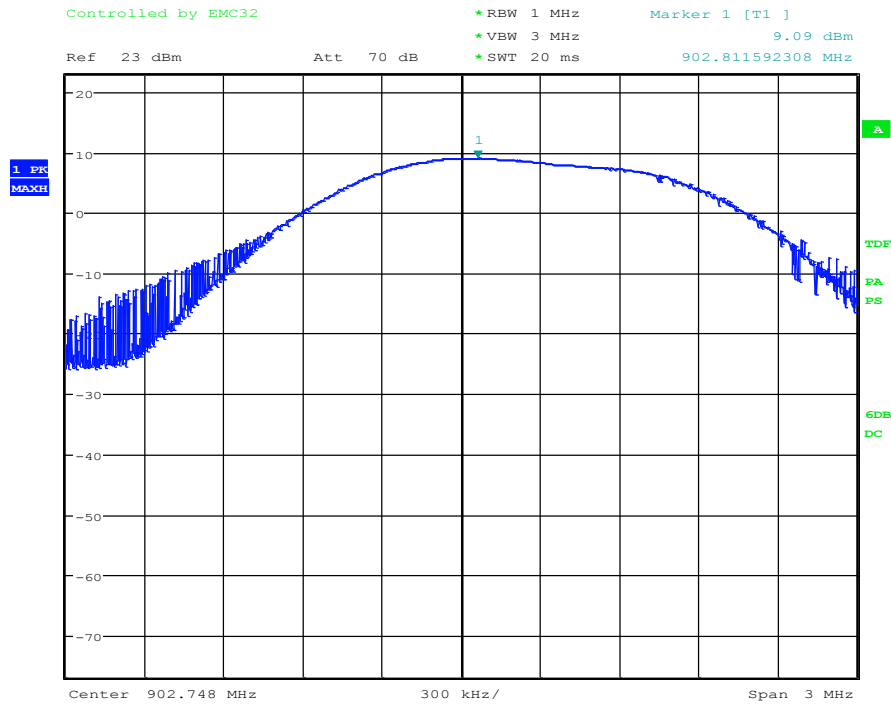
Low Channel, 100V



Date: 1.FEB.2018 17:38:10



Low Channel, 138V



Date: 1.FEB.2018 17:40:19



10 FCC Part 15.247(d) – CONDUCTED SPURIOUS EMISSIONS

The following tests were performed to demonstrate compliance.

RF Antenna Conducted Test

The EUT antenna port was fitted with an SMA connector and directly connected to the input of the spectrum analyzer.

10.1 Requirements:

All Spurious Emissions must be at least 20dB down from the highest emission level measured within the authorized band up through the tenth harmonic.

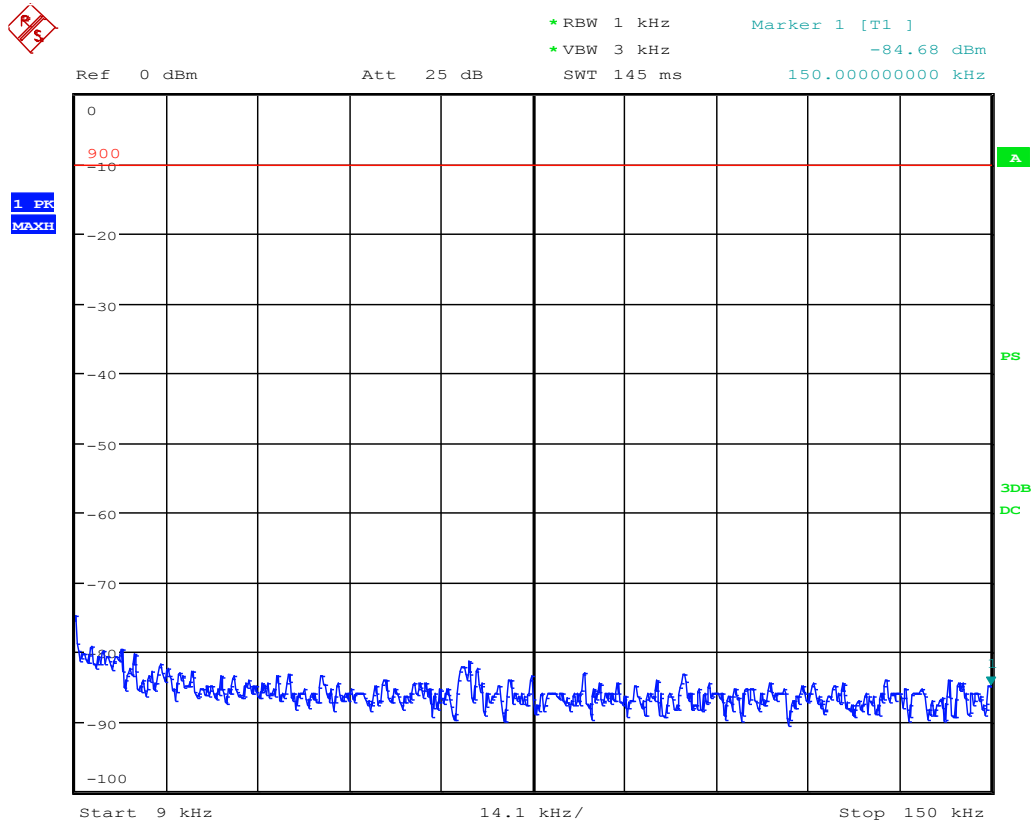
Spurious emissions measurements were made at the low, mid, and upper channels with the appropriate spectrum analyzer impulse bandwidth. Additionally, 20dB down points were measured for the low and high channels to verify band edge compliance.



10.2 Conducted Spurious Emissions Test Data

Test Date(s):	Oct. 12, 2017	Test Engineer(s):	J. Knepper
Standards:	CFR 47 Part 15.247(d) / Part 15.207 KDB558074	Air Temperature:	21.0°C
		Relative Humidity:	47%

9kHz to 150kHz



Date: 12.OCT.2017 12:17:50

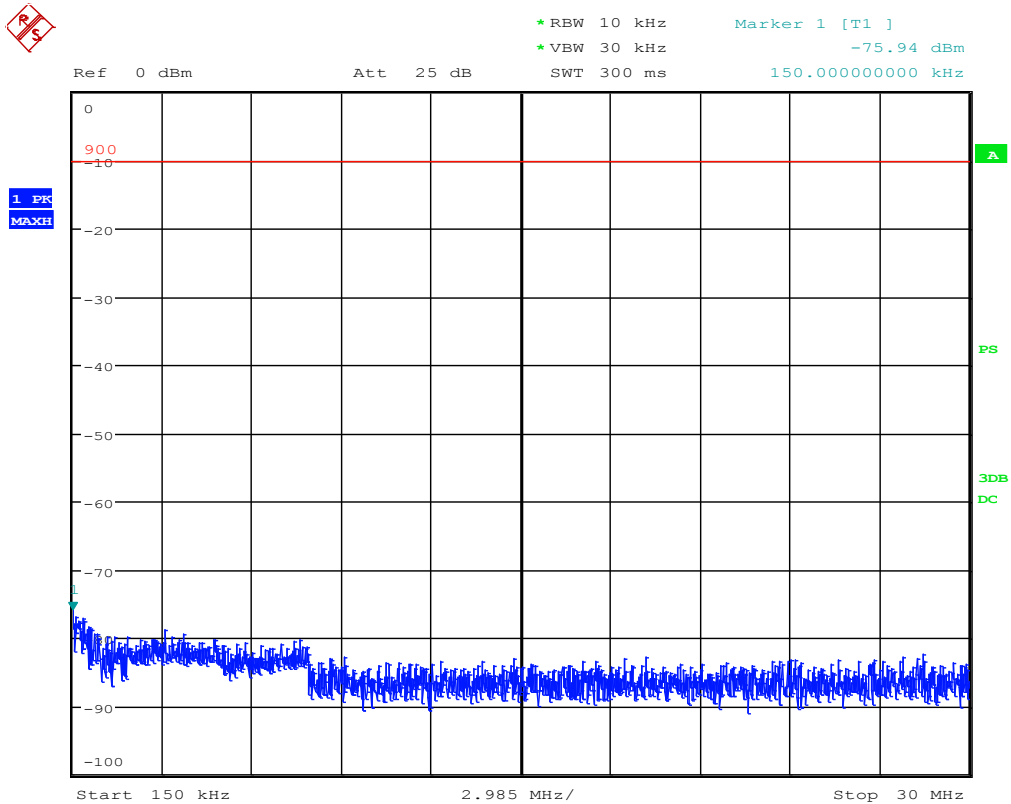


Order Number: F2LQ10353

Client: Magnum Energy Solutions

Model: LTCM300U

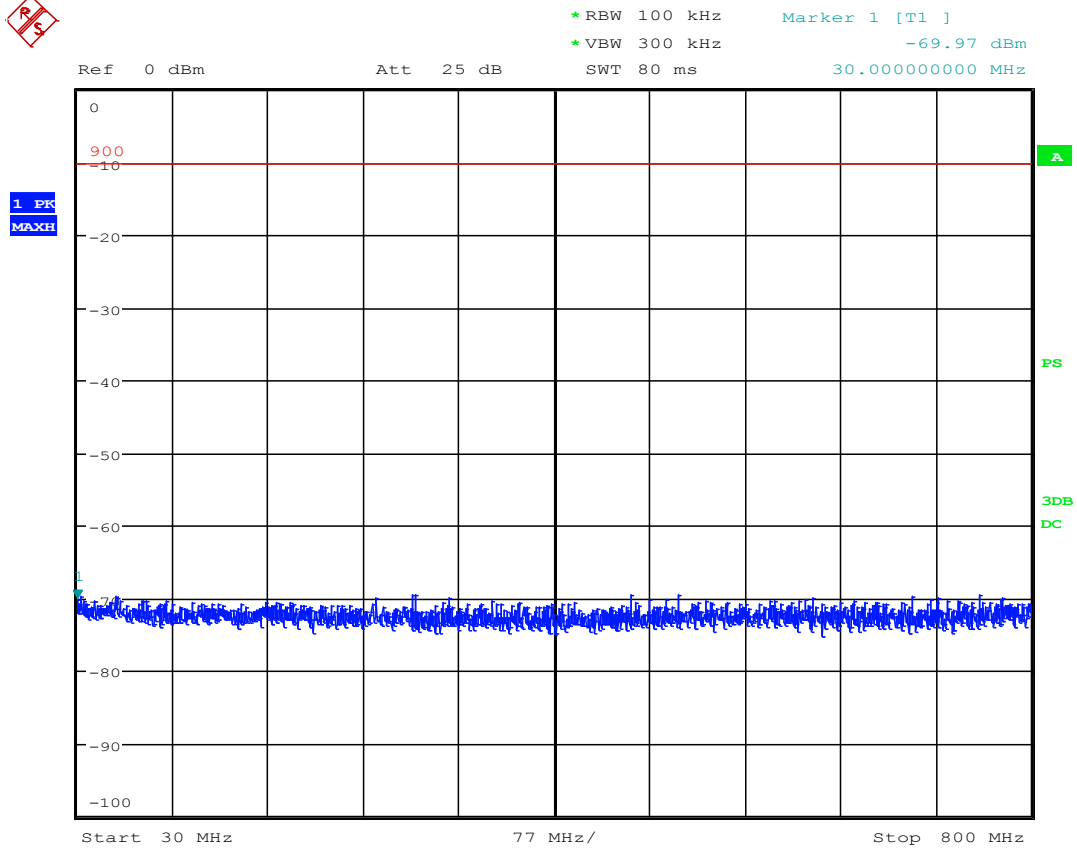
150kHz to 30 MHz



Date: 12.OCT.2017 12:18:20



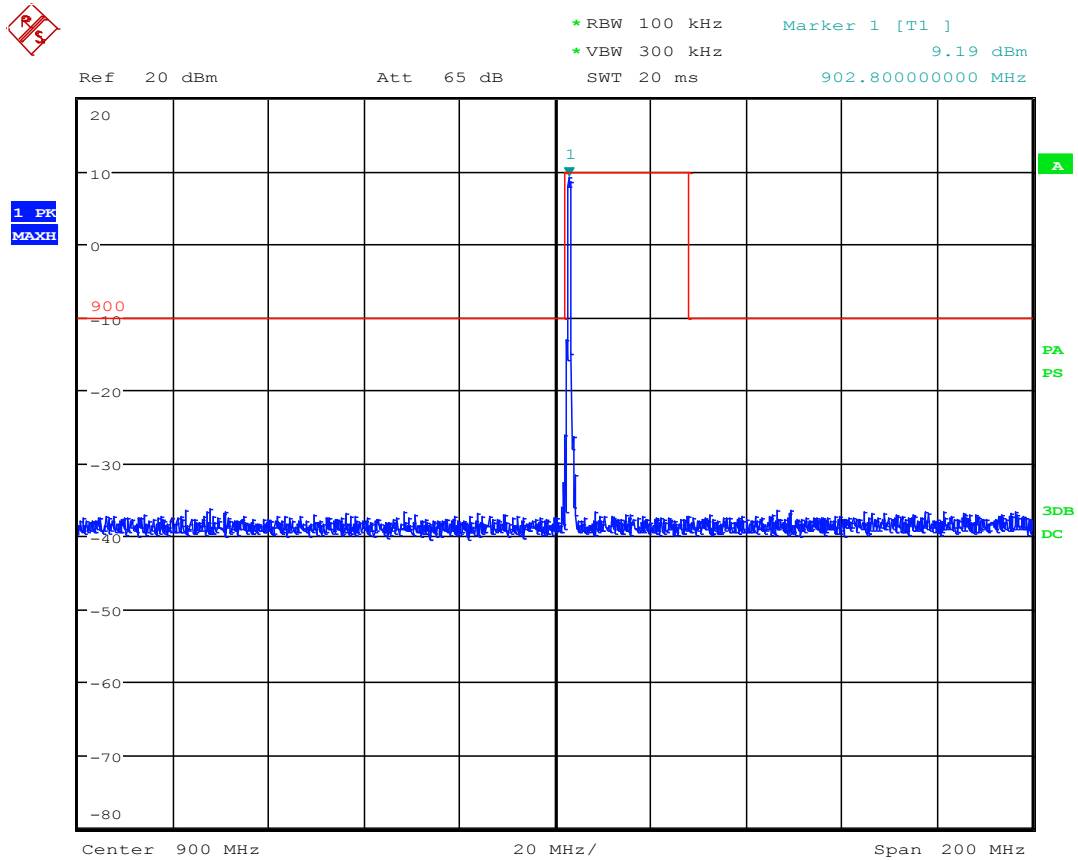
30 MHz to 800 MHz



Date: 12.OCT.2017 12:18:38



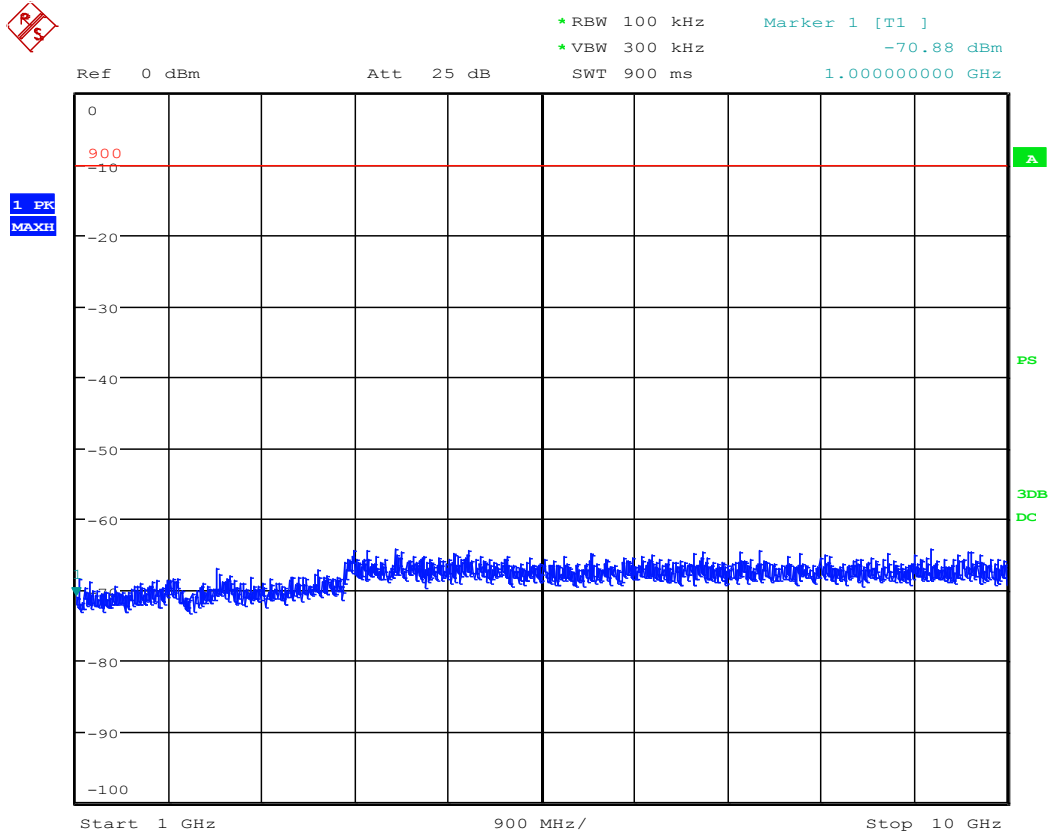
800 MHz to 1 GHz



Date: 12.OCT.2017 12:17:10



1 GHz to 10 GHz



Date: 12.OCT.2017 12:17:34



11 RADIATED SPURIOUS EMISSION

The EUT was fitted with a wire antenna and antenna port was fitted with both its quarter-wave and half-wave Whip antenna. Radiated emissions were measured in a Semi-Anechoic Chamber. All emissions generated that fall in the restricted bands per FCC Part 15.205 were examined.

11.1 Requirements:

All emissions that fall in the restricted bands defined in FCC Part 15.205 shall not exceed the maximum field strength listed in FCC Part 15.209(a).



11.2 Radiated Spurious Emission Test Data

Test Date(s):	Oct. 12, 2017	Test Engineer(s):	J. Knepper
Standards:	CFR 47 Part 15.247(d); Part 15.209 / KDB558074	Air Temperature:	20.2°C
		Relative Humidity:	45%

Notes: Plots are peak, max hold prescan data included only to determine what frequencies to investigate and measure. The EUT was initially placed in a semi-anechoic chamber, and rotated in all three orthogonal positions to maximize the emissions. Characterization measurements were then performed to determine at which frequencies significant emissions occurred. These graphs are shown below.

The equipment was fully exercised with all cabling attached to the EUT and was positioned in a semi-anechoic chamber (SAC) for maximum emissions. While the equipment was energized, the receiving antenna was scanned from 1.0 meter to 4.0 meters in both vertical and horizontal polarities while the turntable was adjusted 360 degrees to determine the maximum field strength. The tables of measured results can be found below.

Some of the frequencies did not change with the EUT on or off. At those frequencies, the test distance was shortened to 1 meter and still no emissions from the EUT were visible or over the ambient or limit.

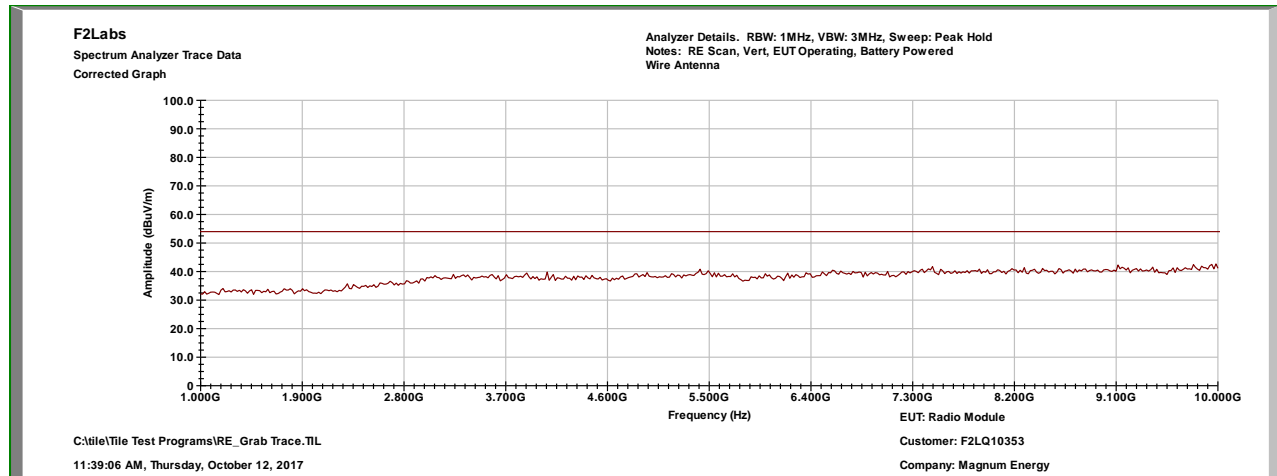
In the following plots, the black line indicates ambient noise and the red line indicates the measurement with the EUT on. Emissions to be found by the EUT were measured and listed in tables. The plots are for reference only and the limit lines are not actual limit lines but merely a guide.

**Measurements****Wire Antenna, QuasiPeak**

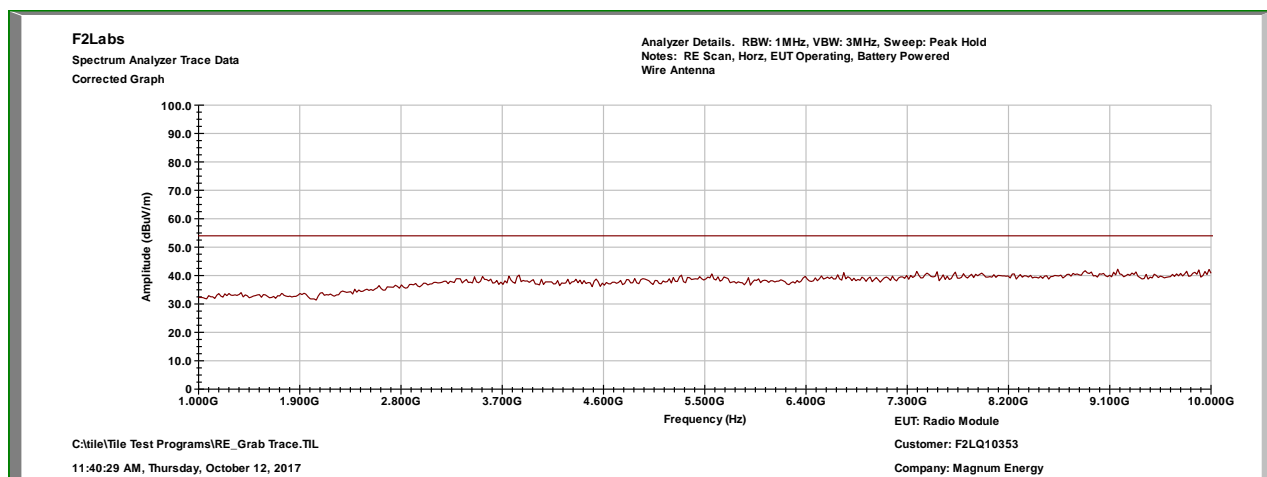
Frequency (MHz)	Antenna Polarization	Antenna Height (cm)	Azimuth (degrees)	Reading (dBμV)	Cable Loss & Antenna Factor (dB)	Emission (dBμV/m)	Limit (dBμV/m)	Margin (dB)
37.500000	V	100.00	3.00	-2.6	27.8	25.20	40.0	-14.8
37.500000	H	100.00	357.00	-2.6	27.8	25.20	40.0	-14.8
74.600000	V	100.00	3.00	-2.8	20.2	17.40	40.0	-22.6
138.000000	V	100.00	3.00	-2.4	26.4	24.00	43.5	-19.5
162.012500	H	100.00	357.00	-2.0	25.3	23.30	43.5	-20.2
173.200000	H	100.00	357.00	-1.9	24.8	22.90	43.5	-20.6
173.200000	V	100.00	3.00	-1.8	24.8	23.00	43.5	-20.5
335.400000	H	100.00	357.00	-1.4	28.7	27.30	46.0	-18.7
410.000000	H	100.00	357.00	-1.6	31.0	29.40	46.0	-16.6
614.000000	V	100.00	3.00	0.4	34.8	35.20	46.0	-10.8
614.000000	H	100.00	357.00	0.4	34.8	35.20	46.0	-10.8
960.000000	H	100.00	357.00	0.8	40.2	41.00	46.0	-5.0
960.000000	V	100.00	3.00	0.8	40.2	41.00	46.0	-5.0



Wire Antenna, Characterization Scan, 1 GHz to 10 GHz, Vertical



Wire Antenna, Characterization Scan, 1 GHz to 10 GHz, Horizontal

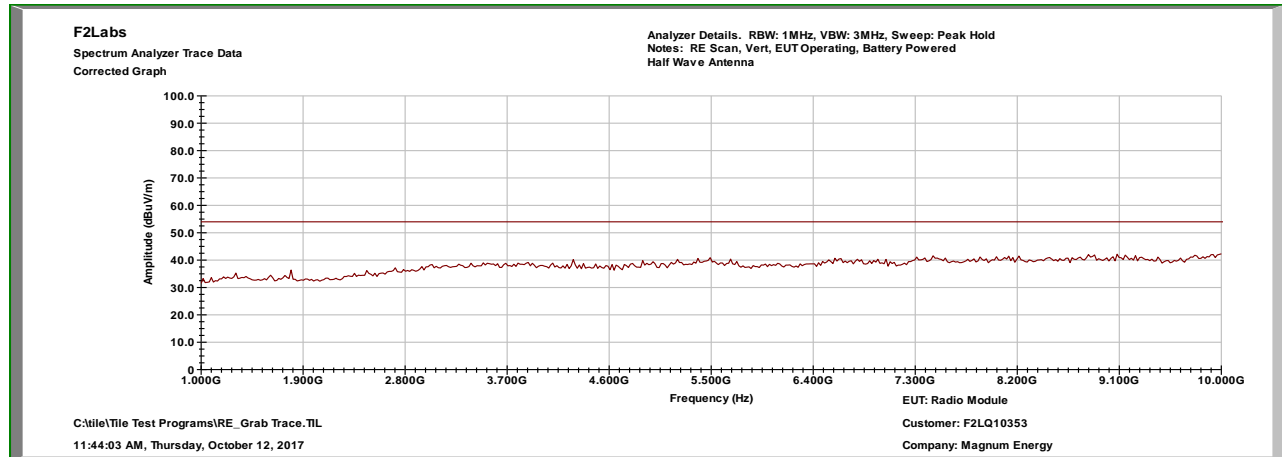


**Half Wave Wire Antenna, QuasiPeak**

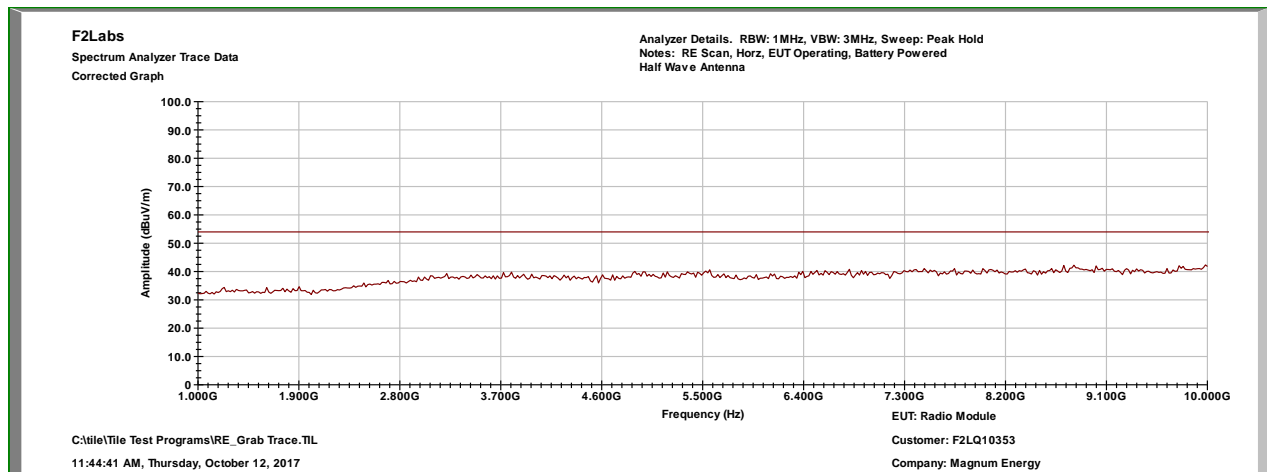
Frequency (MHz)	Antenna Polarization	Antenna Height (cm)	Azimuth (degrees)	Reading (dBμV)	Cable Loss & Antenna Factor (dB)	Emission (dBμV/m)	Limit (dBμV/m)	Margin (dB)
37.500000	V	100.00	0.00	-2.5	27.8	25.30	40.0	-14.7
37.500000	H	100.00	0.00	-2.5	27.8	25.30	40.0	-14.7
74.600000	V	100.00	0.00	-2.6	20.2	17.60	40.0	-22.4
75.200000	H	100.00	0.00	-2.7	20.2	17.50	40.0	-22.5
138.000000	V	100.00	0.00	-2.3	26.4	24.10	43.5	-19.4
173.200000	H	100.00	0.00	-1.7	24.8	23.10	43.5	-20.4
240.000000	V	100.00	0.00	-1.8	25.7	23.90	46.0	-22.1
335.400000	H	100.00	0.00	-1.4	28.7	27.30	46.0	-18.7
614.000000	V	100.00	0.00	0.5	34.8	35.30	46.0	-10.7
614.000000	H	100.00	0.00	0.5	34.8	35.30	46.0	-10.7
960.000000	H	100.00	0.00	1.5	40.2	41.70	46.0	-4.3
960.000000	V	100.00	0.00	2.4	40.2	42.60	46.0	-3.4



Half Wave Wire Antenna, Characterization Scan, 1 GHz to 10 GHz, Vertical



Half Wave Wire Antenna, Characterization Scan, 1 GHz to 10 GHz, Horizontal



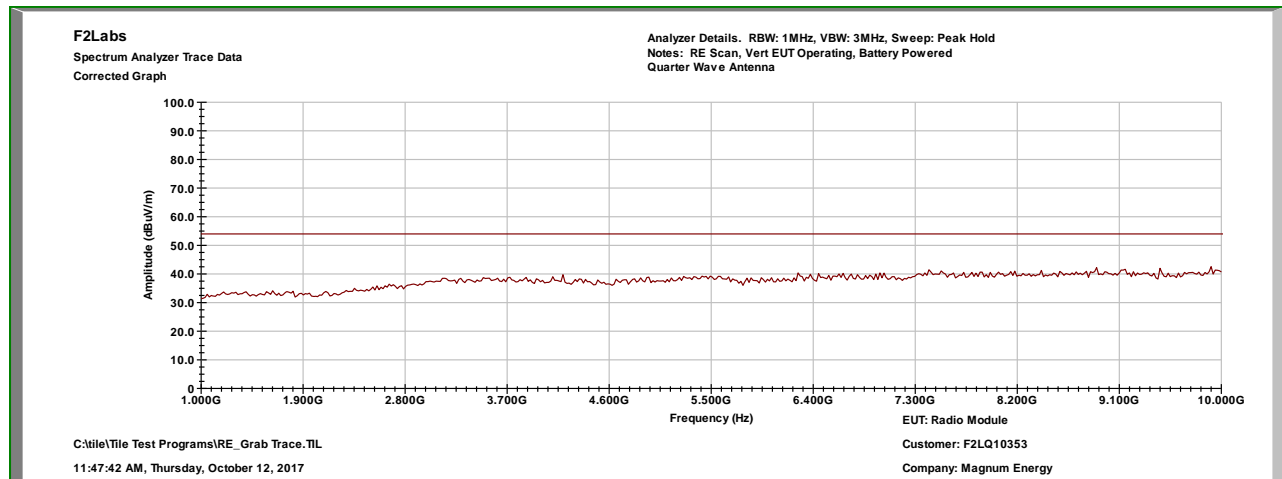


Quarter Wave Wire Antenna, QuasiPeak

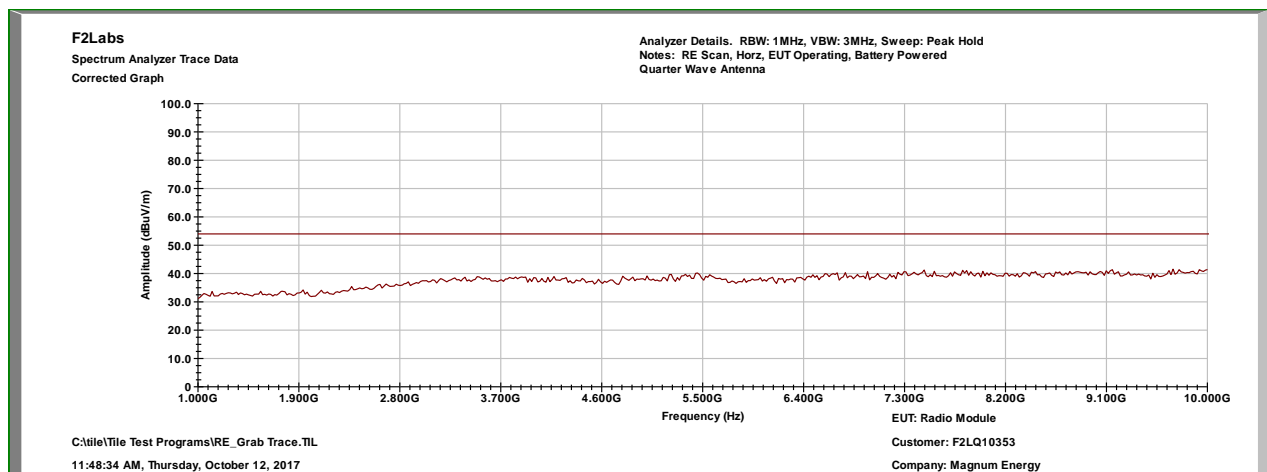
Frequency (MHz)	Antenna Polarization	Antenna Height (cm)	Azimuth (degrees)	Reading (dBμV)	Cable Loss & Antenna Factor (dB)	Emission (dBμV/m)	Limit (dBμV/m)	Margin (dB)
37.500000	V	100.00	0.00	-2.5	27.8	25.30	40.0	-14.7
37.500000	H	100.00	0.00	-2.5	27.8	25.30	40.0	-14.7
75.200000	H	100.00	0.00	-2.7	20.2	17.50	40.0	-22.5
75.200000	V	100.00	0.00	-2.7	20.2	17.50	40.0	-22.5
173.200000	H	100.00	0.00	-1.8	24.8	23.00	43.5	-20.5
240.000000	V	100.00	0.00	-1.8	25.7	23.90	46.0	-22.1
240.000000	H	100.00	0.00	-1.8	25.7	23.90	46.0	-22.1
335.400000	V	100.00	0.00	-1.4	28.7	27.30	46.0	-18.7
410.000000	V	100.00	0.00	-1.6	31.0	29.40	46.0	-16.6
614.000000	V	100.00	0.00	0.5	34.8	35.30	46.0	-10.7
614.000000	H	100.00	0.00	0.5	34.8	35.30	46.0	-10.7
960.000000	V	100.00	0.00	0.9	40.2	41.10	46.0	-4.9
960.000000	H	100.00	0.00	1.0	40.2	41.20	46.0	-4.8



Quarter Wave Wire Antenna, Characterization Scan, 1 GHz to 10 GHz, Vertical



Quarter Wave Wire Antenna, Characterization Scan, 1 GHz to 10 GHz, Horizontal





12 FCC PART 15.247(e) – PEAK POWER SPECTRAL DENSITY (PSD)

Peak power spectral density measurements were performed.

12.1 Requirements:

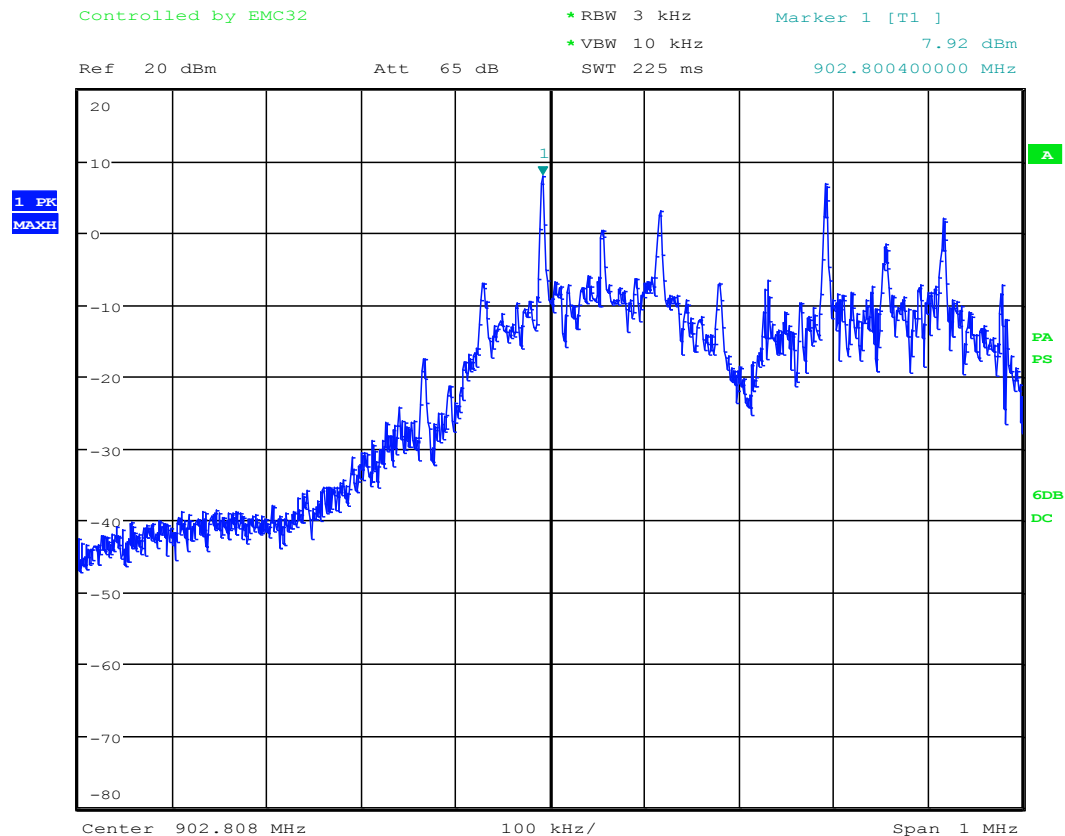
The peak power spectral density shall not exceed +8dBm in any 3kHz band during any time interval of continuous transmission.

Power spectral density measurements were performed at a resolution bandwidth of 3kHz (video bandwidth set at 10kHz). The peak spectral densities were measured at the low, mid, and upper channels.



12.2 Peak Power Spectral Density Test Data

Test Date(s):	Oct. 12, 2017	Test Engineer(s):	J. Knepper
Standards:	CFR 47 Part 15.247(e); KDB558074	Air Temperature:	20.2°C
		Relative Humidity:	45%



Date: 12.OCT.2017 11:13:14



13 CONDUCTED EMISSIONS

13.1 Requirements

In accordance with FCC CFR 47 Part 15.207(a), "Except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 μ H/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

Frequency of Emission (MHz)	Conducted Limit (dB μ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

13.2 Procedure

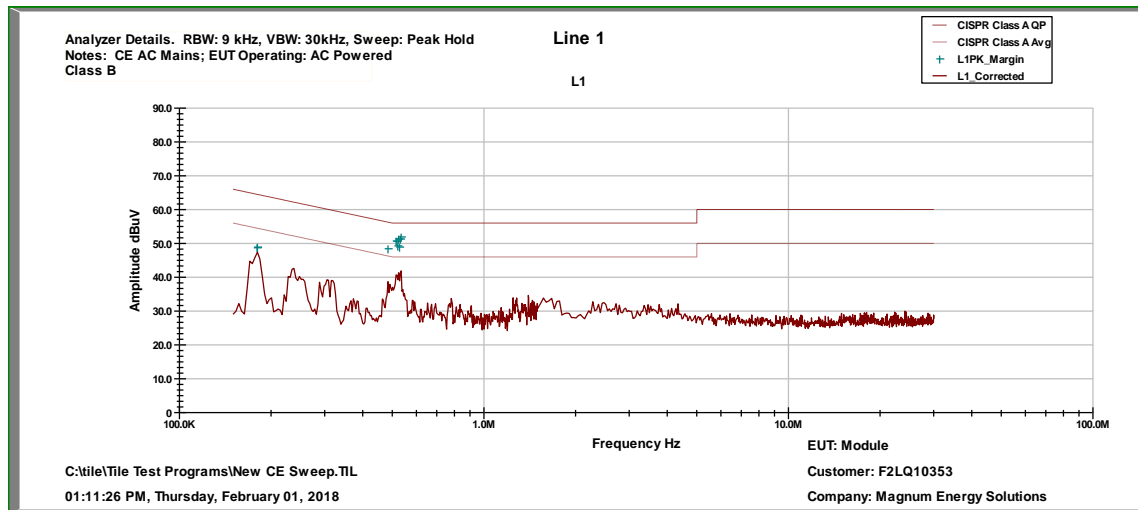
The EUT was placed on a 1.0 x 1.5 meter non-conductive table, 0.8 meter above a horizontal ground plane and 0.4 meter from a vertical ground plane. Power was provided to the EUT through a LISN bonded to a 3 x 2 meter ground plane. The LISN and peripherals were supplied power through a filtered AC power source. The output of the LISN was connected to the input of the receiver via a transient limiter, and emissions in the range 150kHz to 30 MHz were measured. The measurements were recorded using the quasi-peak and average detectors as directed by the standard, and the resolution bandwidth during testing was 9kHz. The raw measurements were corrected to allow for attenuation from the LISN, transient limiter and cables.



13.3 Conducted Emissions Test Data

Test Date(s):	Feb. 1, 2018	Test Engineer(s):	J. Knepper
Rule:	FCC 15.207	Air Temperature:	20.4° C
Test Results:	Complies	Relative Humidity:	40%

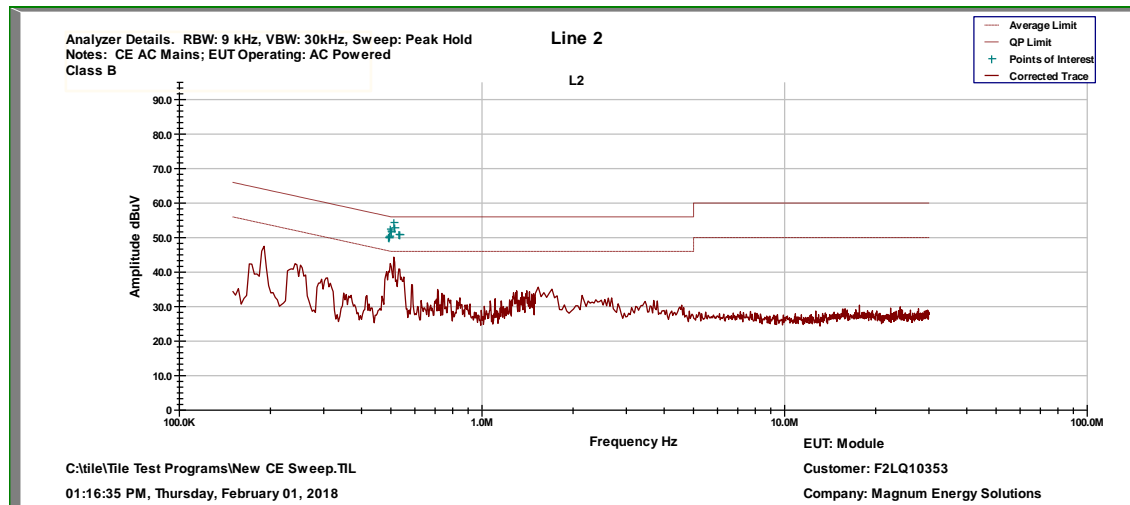
Conducted Test – Line 1: 0.15 MHz to 30.0 MHz



Top Discrete Measurements								
No.	Conductor	Frequency (MHz)	Detector	Level (dBμV)	Adjustment (dB)	Results (dBμV)	Limit (dBμV)	Margin (dB)
1	Line 1	0.18	Quasi-Peak	29.019	11.199	40.218	64.486	-24.268
		0.18	Average	18.230	11.199	29.429	54.486	-25.057
2	Line 1	0.180375	Quasi-Peak	29.497	11.195	40.692	64.469	-23.78
		0.180375	Average	18.544	11.195	29.739	54.469	-24.730
3	Line 1	0.484125	Quasi-Peak	24.448	10.414	34.862	56.268	-21.406
		0.484125	Average	14.276	10.414	24.690	46.268	-21.578
4	Line 1	0.5145	Quasi-Peak	28.365	10.399	38.764	56.0	-17.24
		0.5145	Average	18.317	10.399	28.716	46.0	-17.284
5	Line 1	0.517875	Quasi-Peak	28.076	10.398	38.474	56.0	-17.526
		0.517875	Average	17.044	10.398	27.442	46.0	-18.558
6	Line 1	0.52125	Quasi-Peak	27.823	10.397	38.220	56.0	-17.780
		0.52125	Average	16.297	10.397	26.694	46.0	-19.306
7	Line 1	0.524625	Quasi-Peak	27.557	10.395	37.952	56.0	-18.048
		0.524625	Average	15.185	10.395	25.580	46.0	-20.420
8	Line 1	0.528	Quasi-Peak	27.073	10.394	37.467	56.0	-18.533
		0.528	Average	15.506	10.394	25.900	46.0	-20.100
9	Line 1	0.531375	Quasi-Peak	26.428	10.393	36.821	56.0	-19.179
		0.531375	Average	13.734	10.393	24.127	46.0	-21.873
10	Line 1	0.53475	Quasi-Peak	25.846	10.392	36.238	56.0	-19.762
		0.53475	Average	14.751	10.392	25.143	46.0	-20.857



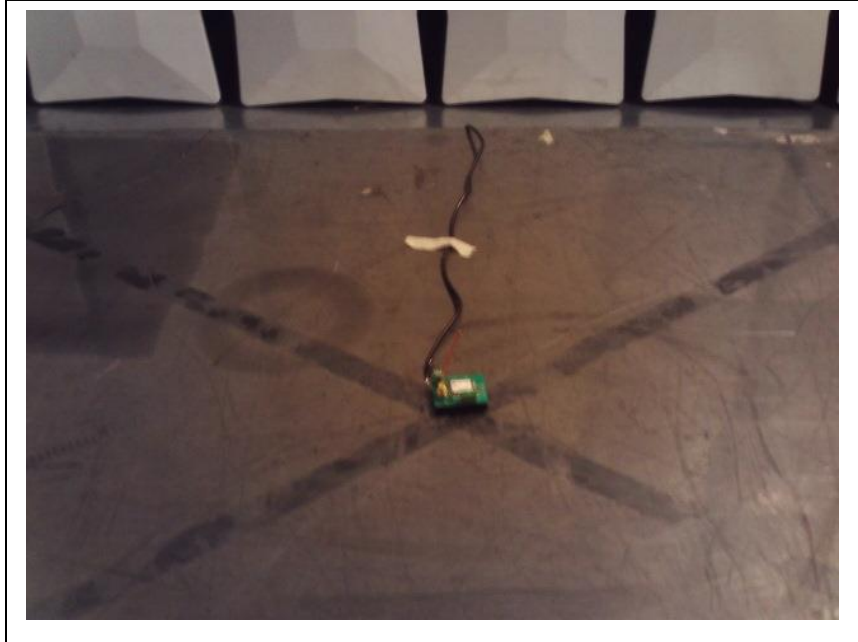
Conducted Test – Line 2: 0.15 MHz to 30.0 MHz



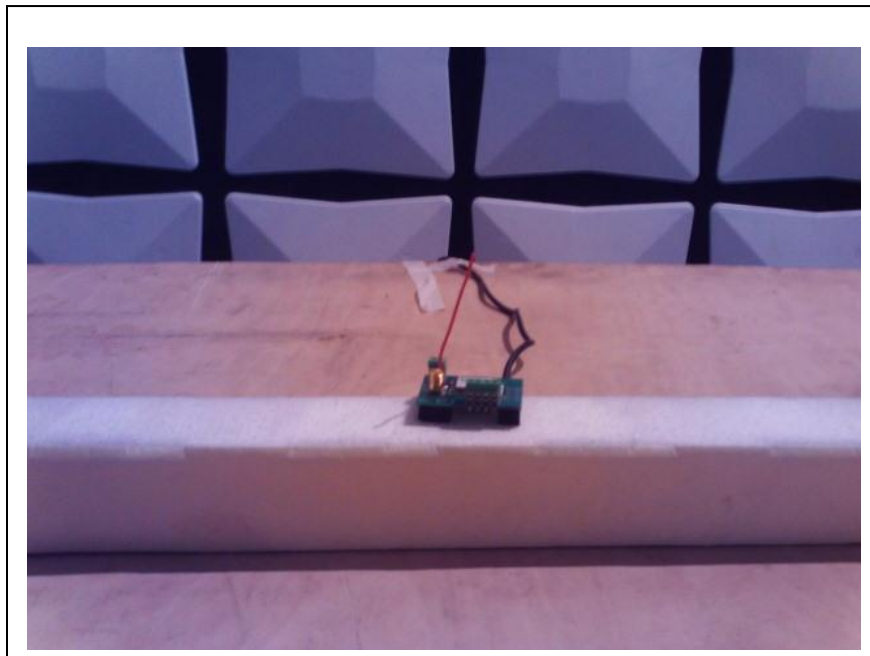
Top Discrete Measurements								
No.	Conductor	Frequency (MHz)	Detector	Level (dBμV)	Adjustment (dB)	Results (dBμV)	Limit (dBμV)	Margin (dB)
1	Line 2	0.490875	Quasi-Peak	26.885	10.409	37.294	56.153	-18.859
		0.490875	Average	17.413	10.409	27.822	46.153	-18.331
2	Line 2	0.492873	Quasi-Peak	27.293	10.407	37.700	56.12	-18.420
		0.492873	Average	17.279	10.407	27.686	46.12	-18.434
3	Line 2	0.495	Quasi-Peak	27.507	10.406	37.913	56.084	-18.171
		0.495	Average	17.432	10.406	27.838	46.084	-18.246
4	Line 2	0.497625	Quasi-Peak	27.706	10.405	38.111	56.04	-17.929
		0.497625	Average	18.595	10.405	29.000	46.04	-17.040
5	Line 2	0.5	Quasi-Peak	28.214	10.404	38.618	56.0	-17.38
		0.5	Average	18.889	10.404	29.293	46.0	-16.707
6	Line 2	0.501	Quasi-Peak	28.327	10.404	38.731	56.0	-17.269
		0.501	Average	18.242	10.404	28.646	46.0	-17.354
7	Line 2	0.511125	Quasi-Peak	29.439	10.400	39.839	56.0	-16.161
		0.511125	Average	19.755	10.400	30.155	46.0	-15.845
8	Line 2	0.5145	Quasi-Peak	29.139	10.399	39.538	56.0	-16.462
		0.5145	Average	20.552	10.399	30.951	46.0	-15.049
9	Line 2	0.531375	Quasi-Peak	27.051	10.393	37.444	56.0	-18.556
		0.531375	Average	16.706	10.393	27.099	46.0	-18.901
10	Line 2	0.53475	Quasi-Peak	26.483	10.392	36.875	56.0	-19.125
		0.53475	Average	14.851	10.392	25.243	46.0	-20.757

14 PHOTOGRAPHS/EXHIBITS – PRODUCT PHOTOS, TEST SETUPS

Radiated Spurious Emission: Wire Antenna, <1 GHz



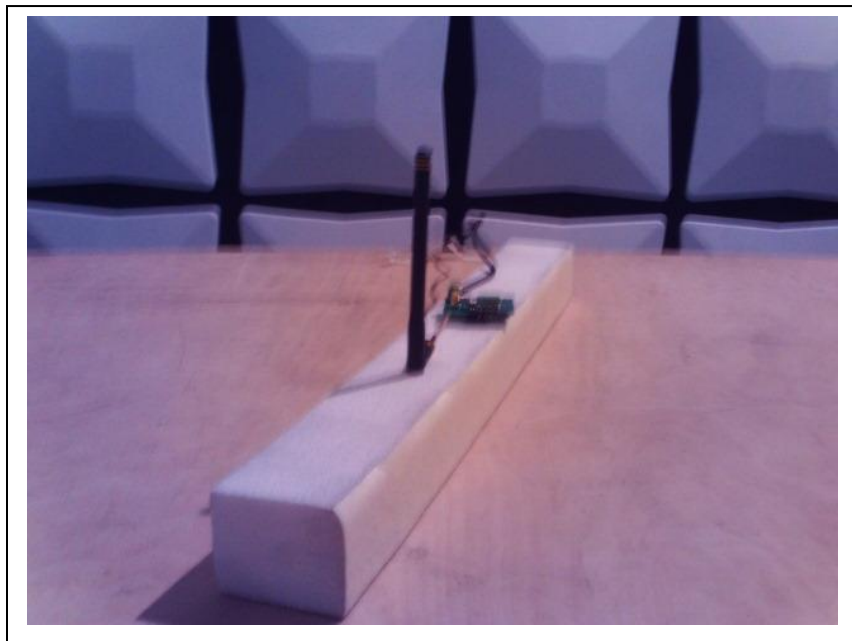
Radiated Spurious Emission: Wire Antenna, >1 GHz



Radiated Spurious Emission: Half Wave Wire Antenna, <1 GHz



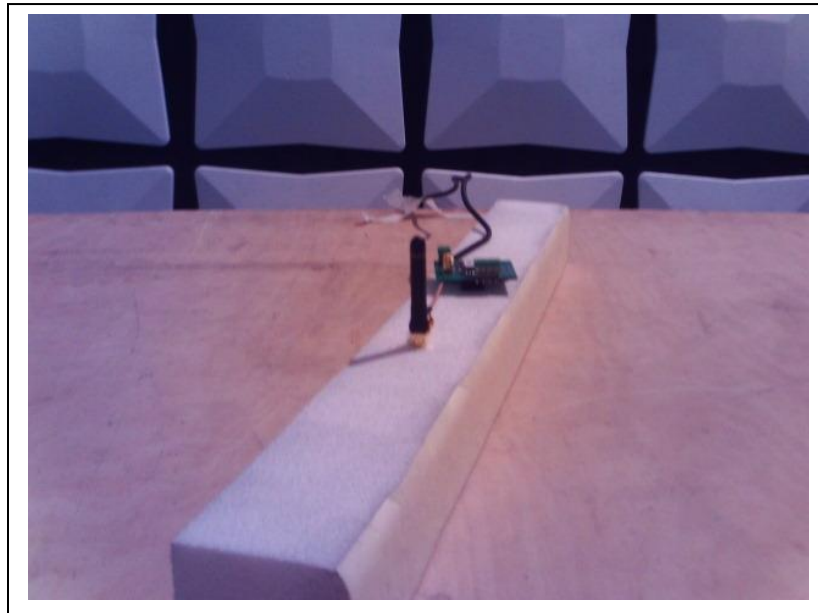
Radiated Spurious Emission: Half Wave Wire Antenna, >1 GHz



Radiated Spurious Emission: Quarter Wave Wire Antenna, <1 GHz



Radiated Spurious Emission: Quarter Wave Wire Antenna, >1 GHz





**Conducted Output Power, Peak Power Spectral Density,
Occupied Bandwidth, Voltage Variations, and Conducted Spurious Emissions**



Conducted Emissions

